

# Dioxins and Furans

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# Dioxin/Furan Challenges and Progress

## Canada

- 90% reduction \*
- by 2000

\* All media within Great Lakes Basin, baseyear 1988

- Progress: 87% reduction in total releases within GL Basin

## United States

- 75% reduction \*
- by 2006
- Aggregate of air releases nationwide and water releases within the Great Lakes Basin, baseyear 1987
- Progress: Goal most likely has been met
- Awaiting finalization of U.S. EPA's 2000 Draft Dioxin Inventory for confirmation

## THE GREAT LAKES BINATIONAL TOXICS STRATEGY

Top U.S Sources (2000 Draft Estimate)	Top Ontario Sources (2004 Estimate)
Backyard Burning	Backyard Burning
Medical Waste Incineration	Motor Vehicles
Municipal Waste Combustion	Nonferrous Foundries
Sewage Sludge Application	Thermal Power Generation (fossil fuel)
Coal Fired Utility Boilers	Federal Waste Incineration
Cement Kilns	Sewage Sludge Application
Diesel Heavy Duty Trucks	Iron Sintering

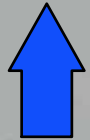
## Ontario Gaps

To meet 90% challenge goal, ~ 8 grams need to be reduced

Top Ontario Sources	2004 Estimate (grams TEQ/yr)	Potential reductions opportunities
Backyard Burning	7.75	Continue BB Subgroup activities
Motor Vehicles	5.55	Examine linkage with PM/S reductions
Nonferrous Foundries	4.47	Verifying NPRI data
Thermal Power Generation (fossil fuel)	3.10	Ontario phase out plan (2009)
Federal Waste Incineration	2.71	Expect reductions due to closures
Sewage Sludge Applic.	2.55	Studies underway
Mining & Smelting	1.996	Code of Practice
Iron Sintering	1.534	CWS

# Sources and Pathways to Human Exposures

SOURCES



TRANSPORT



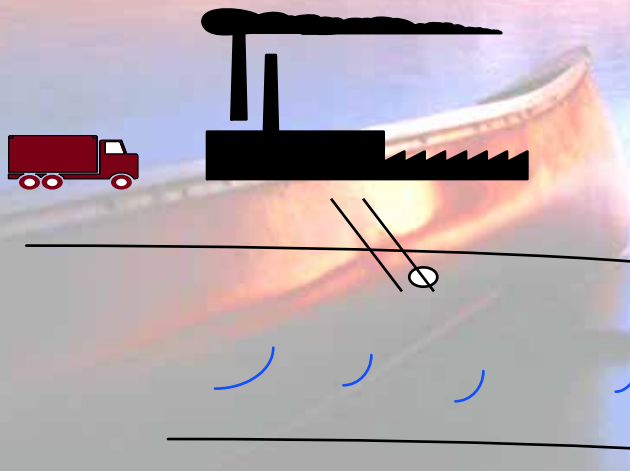
DEPOSITION



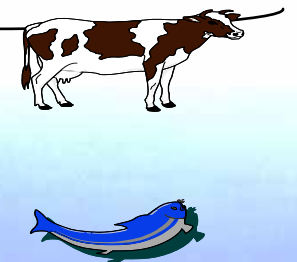
FOOD  
SUPPLY



Reentrainment



Runoff  
Erosion





## Agricultural Burning

- **Begin investigation of Agricultural burning**
  - ◆ **Preliminary study showed waste burning is common in this sector**
  - ◆ **Large increase in plastics use at farms, but limited infrastructure for disposal or recycling**
  - ◆ **Burning often conducted in proximity to food sources**
  - ◆ **Limited data on emissions and activity levels**
  - ◆ **Need to work with agricultural community and develop alternatives to burning**

## Reducing Household Garbage Burning



- [www.openburning.org](http://www.openburning.org)
  - ◆ A document on the progress and activities of the subgroup since its inception is located there
- 3 meetings of the subgroup since December 05
- Education of local officials and the public continues to be the principal effort
- In Ontario
  - ◆ information to farms and rural landowners
  - ◆ workshop for rural landfill operators in NorthWest Ontario
- In US
  - ◆ Development of presentations, brochures and case studies for local officials, tied with the Great Lakes Regional Collaboration
- Explore a Great Lakes mechanism promoting interagency cooperation to reduce air pollution from open burning of waste

## **Outlook for Future Actions**

- **Continue burn barrel subgroup activities**
- **Investigate opportunities to reduce agricultural waste burning**
- **Continue source characterization work**
- **Track releases and ambient air concentrations**
- **Explore pathway intervention**